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No Help Wanted

Young U.S. scientists go begging
with serious consequences for our future

The post-World War II boom in American science funding that sustained the world's greatest expansion of knowledge and improvement in living standards ended in 1987, and many scientific leaders say that as a result, the United States may eventually see slower rates of technological advancement and flagging battles against disease, hunger and environmental degradation.

In 1987, the long-sustained increase in federal funds for research stopped growing faster than inflation. It has since remained level.

Although a constant amount of funding might be expected to support a steady pace of scientific advancement, leaders in the research community caution that may not be the case because of another factor: rapid growth in the number of U.S. scientists. The number of university-based scientists being supported by federal grants has continued to grow at a rate of 5.7 percent a year—2 times faster than the U.S. work force as a whole. The number of medical scientists has grown 10 times faster.

One of the effects of this increased competition for funding, many scientists say, is that basic or pure science research proposals that might yield major advances frequently are rejected because they are long shots or would take too many years to pay off. Instead, they say, the grant money goes to more cautious, incremental proposals.

Another effect is that many young scientists—the future lifeblood of American science—cannot find permanent jobs in research and are quitting a profession that once was viewed as a lifelong calling. Older and more established scientists occupy most of the permanent positions and get most of the grants. According to a study by the National Academy of Sciences, even as the overall number of grant applications was increasing, applications from scientists under the age of 37 dropped 54 percent between 1985 and 1993. Researchers suggest that younger scientists are not seeking grants because they have no permanent job base from which to apply.

The unemployment rate among scientists with PhDs is now among the highest for all professionals. Since 1988 it has tripled, from 1 percent to 3 percent, the sharpest rise occurring even as the overall unemployment rate has been falling in recent years.

The growing number of newly trained PhDs has coincided with a recent influx of foreign researchers, creating a pool of professionals that far exceeds the number of science jobs available in academia and industry. Far from the shortage that experts once forecast, the country now faces what many call a scientist glut.

Scientific groups and politicians have proposed a range of possible ways to avoid the feared dulling of America's scientific edge. Not surprisingly, some organizations contend that the answer is to boost research funding, especially for basic science, the kind of research aimed at learning more about how nature works. Others—including the National Academy of Sciences and its sister groups—say current spending is sufficient, but the nation must set priorities.

Some political leaders and advocacy groups argue that instead of spending so much on basic science, money should be directed into targeted research, such as curing specific diseases or developing particular technologies.

A few scientific leaders say the combination of stagnant funding and a glut of scientists is not altogether bad.

"There's always going to be an oversupply of scientists," says Bruce Alberts, president of the National Academy of Sciences. "My own view is that the system has to be competitive. Getting government funding is a privilege. The stiffer the competition, the better the chance that only the best are getting grants."

Physicist Leon Lederman sees America's position weakening as a result of inadequate funding of scientific research.

But virtually all, including Alberts, agree that in the longterm some effort should be made to remedy the current imbalance between scientists and research money in order to revive the higher-risk, speculative research that helped establish America's preeminent position. "If we persist on this course," says Leon Lederman, a Nobel laureate in physics and former director of Fermilab, the world's most powerful atom smasher, "we can expect to see America's position in the world gradually weaken. We will watch as our technology-based products become less and less competitive in world markets."

Lederman, who was president of the American Association for the Advancement of Science in 1990, links this country's economic and cultural growth through this century to its once exuberant pursuit of science and points to increased science spending by such rising global competitors as Japan and Germany. "America has lived and grown great through science and technology," Lederman wrote in a 1991 warning to his colleagues titled "Science: The End of the Frontier?" "Once upon a time American science sheltered an Einstein, went to the moon, and gave to the world the laser, the electronic computer, nylon, television, the cure for polio, and observations of our planet's location in an expanding universe. Today we are in the process, albeit unwittingly, of abandoning this leadership role."

ALTHOUGH SCIENCE FUNDING HAS BEEN FLAT SINCE 1987, some areas of research have fared better. Nonmilitary biomedical research, mostly funded by the National Institutes of Health (NIH), has grown in purchasing power at an average of 4 percent a year, from \$6.5 billion in 1987 to \$8.4 billion (in 1987 dollars) for 1994. Although this is a real increase, it has not kept pace with the growth in the number of medical scientists—increasing at an annual average of 9.4 percent.

The growth in spending for nonmilitary research has been almost precisely offset by a drop in Defense Department research spending, from \$39 billion in 1987 to \$33 billion this year.

The relative good fortune of civilian research ended in 1992, when budgets for civilian and military research flattened. In the 1995 federal budget for NIH, dominant supporter of biomedical research, and for the National Science Foundation (NSF), chief supporter of nonmilitary and nonmedical research, Congress provided an aggregate boost in current dollars of only 4.1 percent. This just compensates for the inflation rate in the cost of research, which has risen faster than the consumer price index.

Over the same period, the number of researchers competing

for federal grants has been soaring. Many universities expanded their PhD programs in the 1980s in response to NSF predictions of a coming shortage of scientists. As a result, the number of scientists grew by an average of 4.6 percent a year from 1977, when there were 240,000 scientists, to 1989, when there were 374,000 scientists.

Although the NSF changed the way it collects data after 1989, making it difficult to compare totals from subsequent years, other statistics indicate that the trend continues. For example, the number of scientists in "postdoctoral" positions—temporary jobs at which newly graduated PhDs work for established scientists until they can find permanent jobs—has been growing even faster—5.7 percent a year, even as the U.S. labor force as a whole grew at only 2.2 percent annually. Leaders of the scientific community are now trying to encourage young scientists and those still in school to find other careers.

The American Physical Society, the main professional organization of physicists, last April urged university physics departments and professors to tell their students about the poor job market and to steer them to other careers. Some major universities are considering cutting the number of students they admit to graduate schools. Cornell University's physics department, for example, has led the way by cutting admissions to its graduate school by 25 percent.

The number of scientists was swollen further in 1990 when Congress passed a new immigration law designed to give visa preference to foreigners with advanced degrees. As a result of the 1990 Immigration Reform Act, the annual number of job-based visas nearly tripled, from 54,000 to 140,000. About 30 percent of the total is believed to be scientists.

IN 1982, AN ADDITIONAL ONE-TIME WAVE OF scientists came from China with passage of the Chinese Student Protection Act, enacted in response to the government showings of students in Beijing's 1989 Tiananmen Square protests. As a strike, nearly 27,000 Chinese students were granted permanent visas, a high proportion of them believed to be in science and engineering.

In 1979, according to NSF figures, there were 11,000 U.S.-born postdoctoral researchers and 6,000 foreign-born. As of 1982 there were 16,000 U.S.-born and 17,000 foreign-born.

"After spending 15 years training for a career in physics," says Robert Zacher, 35, "I have given up trying to find a job in physics and have become a computer programmer" in a temporary job in Cambridge, Mass. "I was one of the lucky ones and am grateful to have a job. I have been forced to write off my years of investment in physics as a waste of time. My experience is not unusual. It has become the norm."

Even in biomedical science, where the relevance of the research to curing disease is widely accepted, the mood is bad.

"There's a lot of discouragement, disillusionment," says Keith Trujillo, 37, who earned a PhD in neurobiology in 1986 but found only temporary jobs until a few months ago, when he was hired at the recently established California State University at San Marcos. "People are working hard, putting in long hours, weekends, and then they find the jobs aren't there. The money's not there."

New scientists just starting out with a PhD can expect to earn around \$18,000 to \$20,000 a year. Trujillo recalls that in 1986 when he got his doctorate in neuroscience, his younger brother got a bachelor's degree in business. That same year, his brother made twice as much selling copiers for Xerox as he made in the first of a series of temporary postdoctoral positions. Today, eight years later, the salesman still out-earns the scientist without a threshold.

A generation ago the postdoctoral fellowship was a brief internship that virtually guaranteed a permanent job on a university faculty. Now many young scientists move from postdoc to postdoc, trailing their families from city to city every few years. Paul Solirellis, a young physicist, calls these scientists "the migrant workers of today's high-tech society." Solirellis says that after he got his PhD, it took 15 years and nearly 200 job applications to find his current first stint as a "migrant worker" at Ohio State University.

"There are some serious problems in science, especially for young people," says NSF Director Neal Lane. "The job situation is very bad in many fields and we're turning away many of the best and brightest people because we don't have the money to support them."

Many scientists say granting agencies no longer are willing to fund risky ideas, however visionary, because that would take money away from more modest proposals that are sure things.

"Creative grants are nit-picked to death because everyone knows there are insufficient funds. Worse yet, they are trashed based on containing an element of risk," says Sondra Lazarowitz, an associate professor in microbiology at the University of Illinois at Urbana-Champaign and chair of an NIH panel for postdoctoral fellowships. "Frankly, the most creative science is that which takes risks. The situation is favoring the lemmings who copy what has been done and is safe."

Scientists who have reviewed grant applications confirm that review panels have become timid. "The low rate [of success in grant applications] does have the effect of decreasing the likelihood that innovative or unusual research is funded," says Anne

PRIVATE INDUSTRY ALSO IS CUTTING BACK ON scientific research. According to the pharmaceutical industry's trade association, drug manufacturers cut more than 3,000 science jobs in the last two years. The chemical industry shed 16,000 jobs last year, according to the American Chemical Society. Such technological giants as AT&T Corp., IBM, and General Electric Co. have been similarly "downsizing" eliminating thousands more jobs in research and development.

"Near-term profitability pressures have led to a significant downsizing of their [industry's] research staff," says Kumar N. Patel, who led a major research division at AT&T Bell Laboratories until recently becoming vice chancellor for research at the University of California at Los Angeles. "Even those high technology giants who built their industries on the results of basic research have substantially reduced fundamental research activities." Many industry leaders say they intend to rely more on universities to do the research that would lead to new products. But NIH and NSF calculate that they now are able to fund the smallest percentage of applicants in their histories—less than 28 percent of a total of 55,000 applications last year. In some crucial fields, such as biomedical research, the

success rate was just 21 percent. Twenty years ago, nearly half of all applications won funding.

Scientists who have served on grant-evaluation panels say today's lower funding rates make for arbitrary choices among the best applications when deciding which to fund. As a result, many scientists whose ideas receive top marks still go unfunded.

EVEN THE NIH'S HUGE RESEARCH PROGRAM AT ITS Bethesda, Md., campus—once viewed as a crown jewel of American science—is cutting its staff by nearly 12 percent over the next four years. Part of a Clinton administration downsizing of many government agencies, the reduction will require NIH to drop 400 positions in 1995 alone. The 1995 federal budget cuts the Pentagon's funding for research by 14 percent.

Far from being a temporary squeeze, scientific and political leaders say the constriction is likely to continue for the foreseeable future for one simple reason: The 1993 budget agreement between Congress and the White House, intended to fight the deficit, effectively prevents Congress from increasing federal science spending over the next five years unless it makes offsetting cuts elsewhere. And no one expects the budget problems to be gone that soon.

Nor is science funding likely to increase under a Republican-led Congress. Although Republican Rep. Robert S. Walker of Pennsylvania, who is to chair the House Science Committee, and House Speaker Newt Gingrich of Georgia are both known as supporters of science and technology, they remain constrained by the budget agreement. Moreover, observers on the Hill say their advocacy of expensive "big engineering" projects such as the space station may divert funds that would otherwise go to science.

And yet, for all the anguish to be heard within the research establishment, observers would be hard pressed to think that American science—at least for the moment—is anything but a powerhouse of new ideas and bright promises. Biomedical researchers continue to discover the genetic defects underlying many cancers and other diseases. Astronomers make new discoveries about the origin and evolution of the universe. The electronics and communications industries continue to develop ever more sophisticated new technologies.

There are so many smart people in science making use of such powerful new research methods that scientific leaders say impressive progress is virtually assured for many years to come. But they predict that the slump in practical payoffs will come decades from now, when discoveries of today's basic science would be expected to bear fruit.

"The U.S. system of science, which has historically led the world in inventiveness, is being strangled to death," says Dick Tracy, professor of biology at Colorado State University in Fort Collins, who has served on NSF panels that review grant applications. "This is a tragedy for science." ■

NO MONEY ≠ NO SCIENCE

KNOWLEDGE OVER MONEY

AND MONEY/SURVIVAL
OVER

DEGREES, RANK, ETC...



mwh

1995



Free Time

NOTE 1

Free time may be defined as that part of non working time which is left after indispensable functions (sleep, eating, travel to work and back, everyday self service, laundry, etc.) and is spent on recovery of strength and on physical and spiritual (intellectual) development.

Free time embraces study and self education, acquisition of culture (reading, cinema going, etc), social and political activities; but it also includes passive idleness and anti-social pastimes such as indulgence in alcohol and drugs and/or marijuana.

Would it not be advantageous for free time and working time to cease being opposites? Work done during working hours would become creative and free, while free time would be devoted to creative activity.

My free time is spent on self education in that I study the calculus, read Schopenhauer, Russell, etc...

Korzybski's non aristotelian General Semantics; the writing of diaries as well as these meditations - all help in the development of my intellectual-spiritual well being.

Even idleness: card playing, video games, help me to relax. Sharing affection with my female partner as well as our canines is a natural occurrence when in "free time".

I wish the alarm clock were not such a rude invasion of my free time. May be I might discover a way to

Mathematics as an end in itself

About one month ago I received word from the financial aid office at the local community college that I was ineligible for financial aid due to a lack of academic progress.

My time spent studying the calculus went from 3 hours a day to about 3 hours in an entire month. I had become discouraged, and I put the books on the shelf.

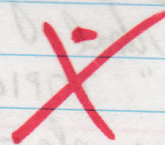
Putting the calculus books on the shelf is not the equivalent of disengaging from mathematical activity. I have been deeply involved in using mathematics for very practical (and deeply personal) ends.

I have created a system for tracking days in my diary notebooks unlike any other system I have ever used before. Its accuracy and its practical worth is all due to mathematical formulae in harmony with astronomical data.

Now, I want to get back into the calculus text book, and I plan on registering for calculus I over the summer. I will be going to college at night by September 1994. I may be taking one course, but this is a start, and it is recognition and affirmation of an inner compulsion to mathematize.

I may go through with a formal appeal to the financial aid office, but the lack of money will not prevent me from continuing my study of mathematics, although college credits may be out of the question.

~~XXXXXXXXXX~~



~~XXXXXXXXXX CHAOS INTERLUDE XXXXX~~

100%

I will outline in a chaotic manner the format I have planned for this diarian book of meditations. What I have is an idea for a diary that consists of notes. Each note will either be a topic catagory note or a nontopic catagory note.

The nontopic catagories so far are as follows:

(1) mind chaos interludes

- these will be spontaneous and free from rigidity. (NO NUMBERS)

(2) program (NO NUMBERS)

- these are instructions of what my organism desires... basically these notes explain the task at hand, projects, etc.

(3) dream recall

- labled with epoch symbol and epoch day, eg... $\alpha 1$

- each dream will be numbered, numbered under the note.

(4) i topic?

- unassimilated. There will be space left for potential topic catagory.

50.0

$\downarrow 0.04$ α_2 $58.0 \downarrow$

2: (1)

Scribblings

D LOG

- scribblings = mind chaos interlude
meditation = session
⊕ replaces $t_{\#}$.
- there is no need for topic category numbers.
I will just write some kind of heading,
and if a heading is worthy of
topic category status, it will go
on disc.
- so all I want to remember is that the
epoch day will be entered before each
session (meditation) number. This epoch
day will be outlined by a red box, and
next to the box I will go the symbol
and a subscript number which is
a counting number in sequence that
seperates writing sessions, not material
content.
- Besides the session/meditation number and
the epoch day, there will be "parts of
a meditation" which will contain a
number in a circle. Each note is
set apart from another by "o" in the
margin.

2: (2)

Mathematics: the study of Integration memo #1

- PROGRAM: I will take a vacation day Thursday
so as to rest. As long as I
complete section 5.4 on Thursday, I
will be on schedule.

 $\alpha_2 \uparrow 0.06$

highlight the headings.

- Each "note" is introduced by "o". There is no need for numbering notes.

- Each "meditation" will consist of parts, but I don't think I really want to call them parts, or notes, or memos... What would I call these meditations that make up one meditation but are separated because of different content? I wouldn't call them anything at all. Just as a session is designated by the start \downarrow and end \uparrow time points, just as meditation is inferred by " α ", and just as note is inferred by "o", so too will each part of a meditation be given by inference.

- The meditation number (the subscript of α) will be written in the margin followed by : (colons). After the colons, a number will be written, designating this is the start of a new segment of the meditation.

- SUMMARY : \downarrow = start of a session : red boundary
 \uparrow = end of a session "
 $\alpha_{\#}$ = meditation : highlighted
 $\#_1 : \#_2$ = where $\#_1$ is meditation $\#$ and $\#_2$ is the "part $\#$ ".

(3:2) Program

- Open calculus text, and take notes from section 5.4 on Area/Integration.
- Shower, eat, and do laundry while playing

for several functions. One will be the rectangular perimeter around the "time point" session markers. The other uses of red lines will be to set headings apart.

The "meditation: part" numbers in the margin will be underlined in red ink.

These line will extend to underline the heading.

- When a new meditation is initiated, one red line above it will serve to end the previous entry. A line below it will serve to begin a new entry. There will be 3 blank lines above, and 2 blank lines below. The α itself will be written between the two red lines, and it will also be highlighted with yellow hi-lites.

3:5

Scribblings

- I am pleased with the transition from the 1993 December 2.0 epoch to this epoch 1994 February 16.0. I have disquarded the clutter, made use of the margins, integrated the use of red ink as well as hi-lites, and best of all, I have finally created a writing process that allows continuity of the streams of consciousness. The flow of the monologue will no longer be cut off and dammed up simply because of having to go to work or having to go to sleep.

TPAT2

wish to relate how mathematics is a hobby,
an activity I pursue in my leisure time.
Mathematics exists in the mind, the
mind, my own little world.

- Mathematics exists without science.
Mathematics exists without engineering.
Neither science or engineering exists
very well without their language
and most powerful tool, mathematics.
- I may not be gifted with technical
aptitude, and I may not yet be
able to create new mathematics,
but, I am still drawn to math
like an addict to a drug. There
is an aesthetic pleasure in
mathematizing that calls me back.
- I will not simply turn my back on
this yearning just because there
is a very good chance I
will not use it to earn a
living in our civilization.
- This whole college thing may bring up
questions like "Why am I
studying math?" "What is
my goal?"
- I most probably will tell myself and
others that I am studying to
earn a degree that will help
me to secure a teaching job
after I retire from the park;
but I think there is a
more noble, less "vulgar" force
compelling me towards mathematics.

- Take a look at the costs of higher education. Unless one gets scholarships, or one happens to have another source of financial assistance, it could be an almost impossible task.

This is true even when one has potential to deeply appreciate what a university has to offer.

- The real world has other obstacles that are even more devastating than the outrageous costs of higher education. There seems to be an unexplainable reaction to the reality we are living on this planet at this point in evolution: suicide. Often this suicidal tendency materializes in drug addiction, alcoholism, and a basic downward spiral.

- Now comes my main argument. I have been setting it up in my favor.

I was one of those children who by second grade was drawn to the aesthetic beauty of mathematics. Even though the philosophical aspects of this mental phenomenon were not explained to us, I experienced pleasure in the precision and the truth of what I was learning.

To make a short story even shorter, I had become dependent on alcohol and marijuana by the time I was studying calculus at age 17.

Now our species faces the dilemma of controlling ourselves into extinction, so having blind faith in our science and technology might not be so very wise.

- Even if we stripped mathematics from technology, mathematics in its pure form - not as tool, but as truth, would still possess beauty in its own right.

- The question I have been leading to is this: must one earn one's living with one's mental mathematizing in order to be within the realm of mathematics deep inside the mind?

- Motives... what motivates one to study mathematics? What motivates me to study mathematics? Could it really be to secure a way of earning a living for my aged organism in the future? If this is it, I would have to add the condition that I would enjoy mental work as opposed to physical labor. Remember a mechanic is more involved in mental images in his mind while working on a machine. A mechanic does not perform physical labor. He performs a mental activity.

The most specific motive I can identify for my pursuing higher education in mathematics is a pure desire

- I don't care if I am a second rate amateur mathematician. If that is to be my status, so be it; but I will not be denied access to the world that exists in the mind called mathematics. I will not, and cannot, be denied access.
- I am sure that I will not be introduced to pure mathematics until after I have earned an associates degree. This will not be until after the year 2000, so I will content myself with researching pure mathematics in my free time.

4:2 Mathematics as a romantic calling

- The stage is set. It is an age of over population, corruption, and ecological turmoil. Our civilization is faced with the possibility of extinction caused by our alienating ourselves from the natural, real world.
- And all I want to do is to enter the world inside my skull to learn the language of mathematics. How does one build a fire? How does one survive in the woods with no lifeline to civilization? I don't want to think about such things. I want to learn how to differentiate and integrate.

- To be perfectly honest and clear, I will state the obvious: if I were to succeed in acquiring an authentic education in pure mathematics, I would naturally be inclined to seek "brain work" or "mental work" when I was ready.
- Who knows where mathematics might lead me? The impulse to mathematize has been recognized, and it will be given affirmation this coming autumn. This drama I am living is an intellectual adventure, and the joy is not to be found in some far off point in space-time were I to land a job as a mathematician at age 45. The joy is to be found this evening, and in every moment to come that I engage in mathematical behavior.
- I have gained access to the aesthetic beauty inherent in mathematics that may be many scientists and engineers never slowed down long enough to experience.
- I have run down so many dead ends that I have had no choice but to slow down. I had to start from scratch, familiarizing myself with foundations.
- When I was a child, I always

experienced pleasure (aesthetic beauty).
I did not experience pleasure when
our work was "tuned" or when
I was under pressure.

Mathematics as poetry is what I
seek. Mathematics as a means to
earn money and design robots I
run from.

4:3

My goals concerning Mathematics

My primary goal is to slow down
enough to honestly perceive
the structure of mathematical
operations. I want to feel
why an argument is true. I
want to be able to
prove theorems. I want to be
able to WRITE MATHEMATICS,
instead of writing about mathematics.

I want to familiarize myself with the
material in the calculus text book
so as to do well in Calculus I, II, and
III. These courses will lead me
through the associates degree trip,
and I may need to get
that A.S. degree from BCC
in order to study pure mathematics
somewhere else.

Although I am a rebel and I
detest authority, the door
to becoming a mathematician
is MTH 171. There are many
doors after that one.

7:2Solitude

- ° I think I like working at Monmouth Battlefield State Park because it enables me to isolate. I am able to be alone much of the time. I think I like to read because it is an activity in solitude. I am drawn to mathematics because it is a purely mental activity.
- ° Why do I enjoy solitude? I can be myself. Even with Sherry, I cannot totally be myself, and around family I play the role of the wise guy - much like the role I play around work associates, but alone, by myself, I am a child of the universe. I become the center of the universe.
- ° It does not matter to the universe whether I am dying of starvation, cleaning a floor, or trying to learn how to integrate and differentiate.
- ° I wish I could get back into studying Schopenhauer's Philosophy, but I am so caught up with mathematics right now, it leaves little time for anything else. I want to absorb and retain mass quantities of knowledge.

7:3 Three areas of knowledge that interest me

- The three areas of knowledge that interest me are Mathematics, General Semantics, and the philosophy of Arthur Schopenhauer.
- The first area I will devote a major part of my time towards studying. I will invest money on college courses, and I make it my ambition to become a mathematician by the time I am forty five years old. What I would hope to achieve before death is to investigate Korzybski's brand of general semantics and possibly create a series of mathematical theorems that would support Schopenhauer's doctrine.
- Although the first area is broadest and will require much formal education, the area of Korzybski's general semantics may take only the studying of his book, Science and Sanity. Besides this, I may one day, after becoming an authentic mathematician, like to look into his institute.
- As for Schopenhauer, his pessimism is so very seductive, and yet I can't see his philosophy being embraced by the human race. Even the scientists know that procreation is the most important aspect of all life. To withdraw from the will to live would be an insane semantic reaction.

α_8

NOTE 3

8:1

Mental honesty

- Mental honesty, intellectual integrity, ... these qualities are not often nurtured in our society, nor in many other societies either. Society functions more smoothly without being analysed to death by a ruthlessly honest intellect. But just because we don't go around verbalizing our every honest thought, this doesn't mean we should continue to play head games with ourselves in the profound privacy of our own minds.

- An example of mental honesty would be for me to admit to myself that I fear I may "go mad" studying mathematics unless I associate with some like minds (attend night school), simply because to the people around me, studying mathematics as a hobby is considered a peculiar pastime.

- Mental honesty could also take the form of admitting to myself that I do not understand something I am studying, which would lead me slow down a bit.

- Mental honesty could lead to atheism, suicide, the world as will and representation, or to a daily renewal.

I can look at my time here at Monmouth Battlefield State Park as a long stay in a sanctuary. I will work with my hands in quiet meditation during the day, and work with my mind as a student of mathematics by night. This is as close to ~~the~~ a monastic life as an atheist can get! Instead of drudgery, my daily routine will become a living, breathing exercise in meditation.

My religion will be advanced mathematics, and I will be as one with the symbols of mathematics as I will be one with the mopping of the floor or the changing of the tire.

My daily goal will be peace of mind. Paradoxically, as work (menial tasks) will be a drudgery for those who only do this work, for me it will be a daily ritual I perform in a sacred manner in exchange for another day's sustenance. Like a Buddhist monk, I will be as lowly as the beggarman. I will see myself as a monastic creature. And as the curriculum at college may be a drudgery for those who are pushing to succeed in the private sector, I will calmly meditate upon the course material with the enchantment of a holy man studying an esoteric language.

- And I need not wait until September, until I am actually driving out to Lincoln a few nights per week, before I begin to develop this monastic state of mind.
- Actually I have lived this life since a child. I have had a monastery within the sanctuary of my mind for years. At age 18 I went through my rebellious search for oblivion via drugs, alcohol, and a wreckless depression that lead me to be incarcerated.
- The incarceration was, believe it or not, an experience of a monastic quality. And after ten years I return to that mysterious esoteric knowledge called mathematics. I am sidhartha. I am the buddha. I am the man in search of truth and a peace of mind that passeth all carnal understanding.
- Although these days I am gifted with the companionship of a beautiful young woman named Sherry, I am more than ever stimulated by the abstract otherworldliness of mathematics, and yet my enchantment with mathematics is such that I would experience psychological pain were I to be drilled and hurried through the curriculum. Therefore, it is not the year 2010 that I am anxious to "get to", nor is it this autumn that I am anxious to "get to". Right here, right now, I

am am living as an organism on a planet within a civilization, and I am "into the task at hand". If the task at hand is cooking dinner or doing the laundry, I may unhurriedly perform this ritual. If the task at hand is laboring to secure another day's sustenance, then may I perform that ritual unhurriedly.

- o And if I am fortunate enough to have the opportunity to study the abstract language of mathematics, then may I do so with the utmost gratitude and reverence for a language that very well may be the purest form of truth I am to come in contact with.

- o I am living the life of a seeker of truth, and I do consider myself a rare individual. May I remember the true nature of my innermost being when I am in the midst of a mass of organisms hurrying into tomorrow, hurrying towards something that they believe will be better than their present, when in reality, it is all relative. There are so many opportunities for enchantment and awakening at each ebbing and flowing of the river. I will guard against being sucked into the

tunnel vision of a linear mentality, for while one is anxiously waiting for the great change, one misses the changes occurring at every moment. Within the linear mentality, one would not behold the symbol S as $\sum_{i=1}^n$ with "feeling" for the meaning of the symbols, but they would only be saying to themselves, "with this I am farther along the way, with this I draw closer to my destination". To cure oneself of the linear mind set running ~~rapid~~ rampant in our culture, one must really slow down long enough to allow an explorative-contemplative state of mind truly grasp the symbols so that the organism - as - a - whole "feels" what they "mean"... in other words, experiences the semantic reaction intended by the symbol.

Feel what $\int_a^b 3x^2 dx$ means when $b=5$ and $a=2$:

~~$$\int_2^5 3x^2 dx = \left[x^3 \right]_2^5 = \left[\frac{125}{3} - \frac{8}{3} \right] = \frac{117}{3} \approx 39\frac{1}{3}$$~~

↑ 6.97

↓ 7.79

$$\int_2^5 3x^2 dx = 3 \int_2^5 x^2 dx$$

$$= 3 \left[\frac{x^3}{3} \right]_2^5 = 3 \left[\frac{125}{3} - \frac{8}{3} \right] = 3 \left[\frac{117}{3} \right] = 117$$

(integration)

9:1

Sometimes life is plain old drudgery

- No matter what kind of monastic philosophy I come up with, some days I won't be able to maintain a meditative attitude about while at work. Today many things went wrong. I don't even feel like writing about it as I would just be bitching. Generally I was irritated and aggravated throughout the day by one problem after another!
- On top of all this, I won't be getting the TI-85 until the end of next week. What I can do when I can't stand the anticipation is create a schedule for developing my skills on the TI-85.
- Work sucked today. I would much rather have been inside with pencil, paper, a calculator/graphics analyser, a computer, coffee, tobacco, etc... Plainly, I would rather be employed as a mathematician than a maintenance worker. And yet I cannot say I am in the wrong position as I do not yet have the skills; but in time - how much time I do not know - I will come out from the trenches and pick up the pencil!

Yes, I know that the grass is never greener over there, and I know that there are some days here at the park that it is better to be the nigger than the master, but this nigger has got a powerful intellect, and I will develop my mathematical skills ever so slowly, and then, my friend, I will rise from my position.

But I surely will always be servant - not master.

I will be slave, whether as a nigger doing all the work no one else wants to do, or I will be a machine doing work that no one is able to do. At least with the latter comes a certain amount of dignity.

I am grateful this college thing is going to be a long process, as leaving the Task House will be as frightening for me as a slave gaining its freedom and being forced off the plantation.

As long as I keep up with my private studies I can look the pencil pushers in the eye, and send them a message mentally that will say loudly: You are above me in rank, position and financial status, but intellectually none of you have anything over me. I am your nigger for today and for many days to come, but there is a brain behind these eyes, believe me! "

↓ 12.51

 α_{10}

DLOG

10:1

Sick day

- For the past few days my throat has been irritated, my head congested, and basically I have felt ill, weak. So this morning I called the office at 8:10 AM notifying Bobbo that I was taking a sick day.
- I am proud of myself. Something peculiar is happening in my psyche. I almost feel as though I may be experiencing a personality change due to the surfacing of my desire to study mathematics. I have been obsessed with math for over two years now... constant. So I want to give in to the changing, I do not want to resist it.
- My study program has been very rigid. Now I want to be a little more spontaneous about it. Although I will continue to use my schedule as a guide, I will not hesitate to do research on areas I may be fuzzy with.
- And I do math because I am interested in it, not because I want a better job. This is the factor in the equation that makes me "odd".

↑ 12.52

↓ 12.63

MLOG 8

10:2 What gives me the sense I am a madman?

- Madman is not the word for it, actually. A man obsessed is more like it, a man possessed by ^{his} subliminal mind.
- I am like a zombie. My intimacy with my female partner, Sherry, is most likely an extremely healthy element in my life as it provides contact with the real world outside my brain.
- My intuition tells me that the college curriculum will be focussed on the applications of mathematics. This means that I will have to be patient. May be by the year 2001 I may take a course at a four year college that will enable me to study PURE MATHEMATICS.
- I have nothing to lose. Secretly I know that the only reason I am studying mathematics is because I desire to understand it. I need not be recognized.

↑ 12.9

↑ 12.64

10:3 My subliminal mind

- I believe the mental processes occurring below the threshold of my conscious awareness has been dictating much of my behaviour. My subliminal mind, in the depth of my psyche,

has been very active. As I witness the development of its "projects" I see its desire manifest in my daily life. It is the subliminal mind that has received all this math so as to be prepared for when I consciously register for the courses at the local community college. It is the subliminal mind that is obsessed with getting ahold of the TI-85, so obsessed that it grabbed the TI-81 without realizing that there was an even more advanced model out there.

Luckily I had the determination to return the TI-81 so as to put it towards the acquisition of the TI-85.

This machine should be in my possession before the end of the week, within four days. I am very anxious.

I have faith that along with continuous practice with both the pencil and paper methods along with the methods with the TI-85, my understanding of the calculus will develop to a point that my subliminal mind will be confident on its secret journey towards mastering the esoteric knowledge that is advanced mathematics.

10:4

The beauty of true understanding

10:5

- I will be keeping track of little discoveries that occur when my brain finally develops an intuitive understanding of a mathematical operation. It may be an operation I have been familiar with for years, but relied on memorization and answer guide books; but finally having developed a "feel" for the operation, I will call such occurrences "illumination experiences".

I will write ILLUMINATION EXPERIENCE OF (the date).

- Now, I have administered an excessive amount of drugs to my organism to help it deal with the "common cold" that has overtaken it.

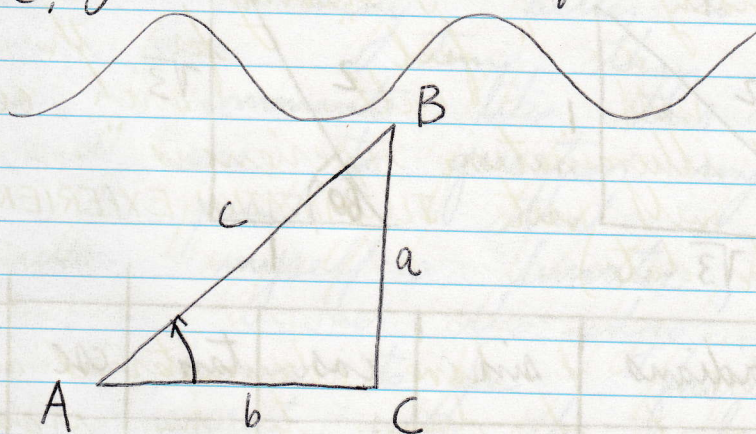
I plan on reporting to work tomorrow morning to do the gas reports, and also to clean the bathrooms, but I most likely will use 4 hours sick leave as I will be ready for a nap with all this medication I will be "ON".

- I reviewed the basis of integration, and for at least an hour I want to read about Inverse Functions (section 6.1).

10:5 Illumination Experience of 28 Feb 1994

- o I have been familiar with the six trigonometric functions for over ten years, but finally an illumination experience occurred deep in the fibers of my subliminal mind.

I need not memorize certain relationships (RATIOS) as I comprehend intuitively the nature of the sine wave.



$$\text{sine } A = \frac{\text{opposite side}}{\text{hypotenuse}} = \sin A = \frac{a}{c}$$

$$\text{cosine } A = \frac{\text{adjacent side}}{\text{hypotenuse}} = \cos A = \frac{b}{c}$$

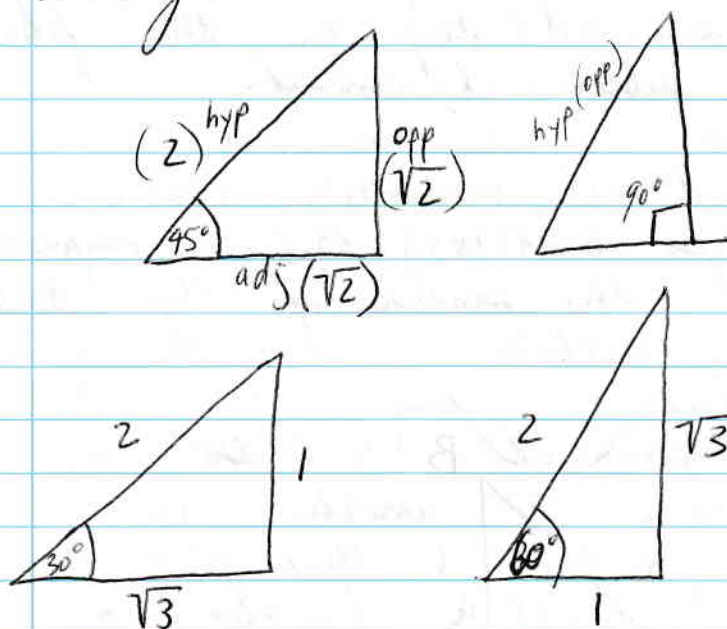
$$\text{tangent } A = \frac{\text{opposite}}{\text{adjacent}} = \tan A = \frac{a}{b} = \frac{\sin A}{\cos A}$$

$$\text{cosecant } A = \frac{\text{hypotenuse}}{\text{opposite}} = \frac{c}{a} = \frac{1}{\sin A}$$

$$\text{secant } A = \frac{\text{hypotenuse}}{\text{adjacent}} = \frac{c}{b} = \frac{1}{\cos A}$$

$$\text{cotangent } A = \frac{\text{adjacent}}{\text{opposite}} = \frac{b}{a} = \frac{\cos A}{\sin A} = \frac{1}{\tan A}$$

This means certain ratios will always exist and I can improve my problem solving intuition if I memorize the basic ratios of the $45^\circ-45^\circ-90^\circ$ triangle and the $30^\circ-60^\circ-90^\circ$ triangle.



degrees	radians	sin	cos	tan	csc	sec	cot
30°	$\pi/6$	$1/2$	$\sqrt{3}/2$	$\sqrt{3}/3$	2	$\frac{2\sqrt{3}}{3}$	$\sqrt{3}$
45°	$\pi/4$	$\sqrt{2}/2$	$\sqrt{2}/2$	1	$\sqrt{2}$	$\sqrt{2}$	1
60°	$\pi/3$	$\sqrt{3}/2$	$1/2$	$\sqrt{3}$	$\frac{2\sqrt{3}}{3}$	2	$\frac{\sqrt{3}}{3}$
90°	$\pi/2$	1	0	N/G	1	N/G	N/G

• some important patterns can be recognized:

$$\sin \theta = \cos (90 - \theta)$$

the Pythagorean relationships:

$$\sin^2 \theta + \cos^2 \theta = 1, \quad 1 + \tan^2 \theta = \sec^2 \theta$$

$$1 + \cot^2 \theta = \csc^2 \theta$$

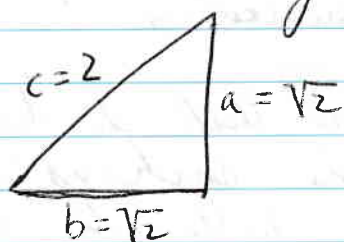
- This stuff is elementary, but with the use of scientific calculators, I must have forgotten the beauty of these relationships, and now that I am getting into the integrals of inverse trigonometric functions, I want to take full advantage of this illumination experience.

- I want to note here that I have heard comments from people such as, "You have nothing better to do in your free time than study math?" and comments like this one have caused me to question my sanity to the point that I often consider myself a lunatic, a madman, someone over the edge... but it is not insane to be fascinated, even obsessed, with the language of mathematics. I say I am simply engaging in the activity of time binding, assimilating the symbols that represent truth into my organism.

- I have proof that mathematics is poetry to me. The proof is that I spend almost every second of my free time in pursuit of deeper and deeper understanding of mathematics, and I repeat again and again what sets me apart from the scientists and engineers is that I do so for the pleasure of experiencing the beauty, the aesthetic quality of mathematics itself.

- I will use the $45^\circ-45^\circ-90^\circ$ triangle to show the intuitive understanding developed by sensing the beauty and the truth of the trigonometric identities!

- Recall the Pythagorean Theorem



$$a^2 + b^2 = c^2$$

- notice that $\sqrt{2}^2 + \sqrt{2}^2 = 2^2$
or $2 + 2 = 4$

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\text{because } \left(\frac{\sqrt{2}}{2}\right)^2 + \left(\frac{\sqrt{2}}{2}\right)^2 = \frac{2}{4} + \frac{2}{4} = 1$$

$$\text{also } \left(\frac{\sqrt{3}}{2}\right)^2 + \left(\frac{1}{2}\right)^2 = \frac{3}{4} + \frac{1}{4} = 1$$

$$\text{from this, } \sin^2 \theta = 1 - \cos^2 \theta$$

$$\sin \theta = \sqrt{1 - \cos^2 \theta}$$

$$\cos \theta = \sqrt{1 - \sin^2 \theta}$$

$$1 + \tan^2 \theta = \sec^2 \theta$$

$$1 + \left(\frac{\sqrt{3}}{3}\right)^2 = \left(\frac{2\sqrt{3}}{3}\right)^2$$

$$1 + \frac{3}{9} = \frac{4 \cdot 3}{9} = \frac{12}{9}$$

$$1 + \cot^2 \theta = \csc^2 \theta$$

$$1 + (\sqrt{3})^2 = 2^2$$

$$1 + 3 = 4$$

69
Once the ratios are understood, and a good amount of the trigonometric identities are committed to the memory of the organic brain, the manipulations can be made to integrate.

Integration is like being given an answer and having to find the question. It is a much more complicated process than differentiation.

Recently I have experienced illumination about symbols such as π , e , and how \ln is really \ln for natural logarithms, or $\log_e = \ln$. I had always read it as "inverse". What a revelation that was!

As for as the significance of the first and second derivatives of a function in curve sketching, I have experienced the beautiful in that also. So much so that I believe the beauty and pleasure experienced will not be killed by the ease of analysing curves with the TI-85. I found the "table method" tedious anyway. I am a time binding organism, I might as well use the most powerful tool I can afford - and this tool is the TI-85. Many illumination experiences to come!

↑ 12.97

↓ 13.33

~~While I sleep~~

10:6

While I sleep

- The subliminal mind zooms in on what I study. It does this with intensity while I am sleeping, so I not only think mathematically during my free time, but the subliminal mind reviews the material I have been studying in my sleep.
- I saw the trigonometric ratios over and over again in my sleep. All the years I have been away from math, I always hoped for a better understanding of the trigonometric identities, and now I think I am developing just that.

↑ 13.34

↓ 13.54

α_{11}

MLOG 9

11:1

On being drawn to mathematics as a drug

- Does the possibility that I am addicted to the pleasure I experience in developing a deeper and deeper understanding of mathematics tarnish this activity in any way? Does the fact that I am obsessed with math diminish the skill I am developing? I admit my behavior is obsessive and compulsive, but what better outlet to direct this nervous energy than

the noble pursuit of mastering the language of mathematics?

I have taken a half day sick leave today so as to nap, to recover from this head cold. I may take notes ~~and on~~ section 6.1 and even get into the exercises later this evening. Because of an approaching snow storm, there is a chance the arrival of the TI-85 may be even further delayed. The suspense is building... it is like being in a movie... I am the noble mathematician hiding in the role of an unskilled laborer, and I am waiting to get my hands on the most powerful graphing/scientific calculator available to the private sector.

As my pleasure in developing analytical skills grows, where I am going loses all meaning. It is no longer important. Mathematics has become poetry to me. I have crossed over the line into a world beyond the values of practicality.

This doesn't need to be explained or justified. The good that comes from this obsession is the pleasure of experiencing the aesthetic beauty of mathematical truth. Anything else, like a diploma or a job in the field of mathematics, would be a bonus, a dream come true for this mathematical mind peering out of a janitor's eyes.

↑ 14.02

↓ 16.37

11:2 TEXAS INSTRUMENTS TI-85 to be named

- Remember that I made the mistake last month of buying the TI-81 at Palace Electronics. I liked the TI-81, but at Borders I discovered a manual on the TI-85, Texas Instruments most advanced calculator as of 1994. I was disappointed that I had spent so much money and not gotten the cutting edge of technology.
- Weeks passed. A month passed. I managed to get store credit for the TI-81 upon returning it to Palace Electronics. Today, the manager, promised to order the TI-85 for me, but after 3 weeks I finally decided to call the 1-800 number for Texas Instruments to get a couple of names of local retailers who might have the TI-85 in stock. Best Products had one: price, \$105.00. I picked it up last night, and this morning I will spend the credit at PE on mom's birthday present - as well as Joe's.
- The TI-85 outshines the TI-81 by far!
- The editors of Explorations call it "the little black box" ... a magical device, a mysterious electronic instrument. So, I may refer to the TI-85 as the little black box.

↑ 16.4

"You should go out dancing."
"You should go fishing."
"You should go to the
Crow Rendezvous."
"You should
do something less 'cerebral' to have
fun."

- Why is math fun for me?
- May be because I am not "rated", yet.
Let's see how much fun it
will be when I get graded, rated,
and categorized as a lunatic
janitor / mathematician.
- I will type a letter to BCC, then I
will spend the rest of the day
reading the TI-85 GUIDEBOOK;
I put first, a note concerning
the SPEC 2 title.

11:4 Eligibility for Park Maint Spec 2

- Claude Desjardins ranked #1 NV on the
application for Spec 2. The application
was the test itself. I spent
3 minutes filling out the application
and I placed #18 NV.
Mark Snyder placed #24 so I don't
feel so bad. but Chuck is
worried. I won't be "reachable"
for quite awhile. I am not
too concerned about this. I
am content to be on the list.
Sometime during the year I will
hopefully get the Spec 2 title,
which includes a raise.

13:1

ON ordering the LINK-85

- Today I called Texas Instruments and got the specs on the compatibility factors for the computer to be linked to the TI-85.

It turns out that the computer in the shop is probably compatible, so I sent them a check for \$80.00.

If in fact Jimmy and I are able to link the TI-85 to the computer in the shop, I will have access to printing graphs stored on the TI-85.

I will also be able to store programs on disk. If I have a homework assignment for math that includes a graph, sheet, I will be able to work at the shop rather than travel to Lincroft just to use the computer.
- If I am unable to link the TI-85 to the SHOPCOMP, I will be seriously thinking of purchasing a reperfashed computer for the house with clothing allowance and income tax returns.

Most likely, the link-85 will be compatible with the shop comp, which will give me the opportunity to utilize every available break assimilating LINK-85, TI-85, and SHOPCOMP into my Quest For Knowledge and Understanding.

↓22.93

13:3 Investing cash on the shop comp

Today I asked Jimmy if the ~~shop~~ computer in the shop, the one he resourcefully rigged together from a heap of disquarded units disquarded by Trenton, was capable of mathematical operations - the simplest of course. I wondered if I could type in `PRINT 3+5` for it to display 8. We tried it, and it was verified that it could not do this without a "basic" program diskette.

He informed me that he could give ~~part~~ this capacity to the machine if ~~he~~ it had a hard drive. Then he went on to tell me that he had a hard drive that worked, but that the card for our humble shop computer was damaged. He said he could get a new card for \$20.00 but that he didn't have the cash.

I offered to pay for it as I have a personal interest in seeing this machine - the one I affectionately refer to as the SHOP COMP - at maximum capacity.

He found the part for \$30.00 so I dropped thirty dollars cash on his desk. He said he will pick it up tomorrow, and I am enthusiastic about the benefits that the hard drive capacity will produce.

Not only will we have access to all the
diskettes I we used to put in ~~disk~~
drive "B", but the only thing we will
have to insert a diskette is
when we are saving memory on
software or formatting of a software
diskette to harddrive.
This will make my operations with the
LINK-85 much less tedious.

I have adapted so well to the shop
computer in only a few days of hands
on interaction in solitude, and I
am confident that between it, the
link, and the little black box,
by September when I attend Brookdale,
I will have less fear about
the present computer based calculus
curriculum. In fact, the reason
I have chosen to go back
to the basics of the calculus
rather than go full speed
ahead into the applications of
integration has everything to do
with my desire to develop
confidence in doing calculus, with
the assistance of machines,
while at the same time developing
my paper and pencil skills.

13:4 Lifetime achievement award to JACK

All my family knows my favorite actor is Jack
Nicholson - raised in Mamasquan
New Jersey, star of "One Flew Over The
Cuckoo's Nest", "The Shining", "A Few Good
Men" etc. He was honored tonight on TV.
I watched the entire program.

13: 5

Running Into Brother Bob from CBA at the Delicious Orchards

I was with Sherry shopping at the Orchard market in Colts Neck when I saw Brother Bob, my calculus teacher from CBA. The effect this had on me is peculiar. I sense a mixture of depression, pride, and confusion about my engaging in the pursuit of a degree as a mathematician.

The depression is a reflection of the fact that 19 year old graduates from CBA are more advanced in the study of mathematics than I am because of the events that ensued in my life over the past ten years. The pride comes from the fact that I take shelter in a beautiful old house on a secluded plot of land. Pride is also aroused by the fact that I am compelled towards the study of the calculus by forces within my own being, not by the desire for a higher position in society.

The confusion is caused by my feelings of inadequacy concerning mathematical ability compared to whiz kids. This confusion is magnified by the existence of an innate belief I have that ~~I am somehow~~ my interest in mathematics is somehow PURER than those 19 year old whiz kids.

14:1 Dependency on technology: Can it be limited so as not to decrease mathematical ability?

I have come across two opposing forces, one in The Art of Mathematics, the other in Explorations of the TI-85. The editors of Explorations believe that the new technologies like the little black box will help students better understand mathematics. In fact, they propose a change towards teaching abilities in solving real world problems or "applications problems". To make these changes, they preach that the paper and pencil techniques (skills) be deemphasized or eliminated from the calculus curriculum. When I heard/read this, I felt pressured to conform. I had fought the concept of computers when I was 17, but now ten years later, with the release of the TI-85, I am actually enthusiastic about assimilating "the little black box" and computers into my exploration of mathematics. Then I read in The Art of Mathematics: "The future seems to hold, for mathematics instruction, an increased dependence on technology in the form of computers, hand-held calculators, etc. There is a clear correlation between the declining mathematical abilities of American Students and the aggressive introduction of these technologies into the mathematics classroom. The decline began when the technology came in."

• This marks yet another turning point. Maybe I am fortunate to have had little involvement with computers. Maybe it is a good thing that I am in the peculiar situation of being a human being who had a nervous breakdown just before going to college. For now, ten years later, I am not in the uncomfortable position of intense competition for the good paying jobs. I am so far removed from that segment of the population that mathematics to me is as much a form of leisure and "art" as poetry.

• And yet I am not radically at odds with the new technologies used in mathematizing. I am even quite excited about using the graphic analyzer to help me develop visual analytical skills, but I am also hungry to increase the aesthetical quality in my exploration of mathematics.

• Now is a moment to make a decision to find a balance between "paper and pencil skills" and "skills with the technology of the little black box".

• It is good to pause now to recollect my thoughts about the TI-85, the LINK-OS, and the SHOPCOMP. I won't let myself be so focused on the technology that I lose my appreciation for paper and pencil skills.

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So, even though I am anxious to receive the link, and even though I really believe the TI-85 will be a powerful tool to have when going to college at night, I will want to limit my dependency upon the technological devices. By this I mean that even though I will not only utilize the little black box, I but will actually develop my understanding with it, I will not allow my mathematical ability to be dependent on the electronic devices. Even for aesthetic reasons alone, it will be wise to have a strong foundation in paper and pencil skills.

Could this be what my grandfather meant when he said that "all that stuff is done on computers now", but it is a great thing to know.

This means that if I am careful, if I use the technology available while simultaneously understanding paper and pencil techniques, I may become a more genuine mathematician than the young engineers I will encounter at the end of ~~my~~ the long road of higher education. I may become a serious revolutionary seeking a radical alternative style of mathematics education. And we will not forget Korzybski's Science and Sanity.

- I do not want to see the little black box become as an enemy or an evil presence. The TI-85 is precisely a POWERFUL TOOL. It is for all practical purposes, MAGIC. And I am sure to experience satisfaction in assimilating this powerful little black box into my explorations.

- Being 27 years old, I can humbly accept the fact that I will not achieve great status in the mathematical community. My life goal is not to become a great influence on our culture. My life goal is to endure existence until I die, and part of this enduring means that I recognize the unconscious, subliminal mind that experience pleasure in mathematics.

- So I have decided upon a limit.

lim Using C+L to understand math = Paper and pencil skills
 CALCULATORS → UGLINESS
 COMPUTERS

- My primary motive in studying advanced mathematics is to experience aesthetic pleasure.

↑ 23.74

14.2 SHOPCOMP now has harddrive

Jimmy installed the new card and harddrive into the shopcomp. Now, over the next couple of weeks I will begin studying both Explorations with the TI-85 and the Larson/Hastetter Text while taking notes in ~~to~~ two different composition notebooks.

From the sound of the last entry I may seem to be getting back into an anti computer frame of mind again. This is not so. I am very enthusiastic about having access to the shop computer as well as the TI-85. I will go about my explorations as usual, although I will be pausing regularly to study the ~~TI-85~~ guidebook.

There is no black and white solution to the conflict between technological tools vs. paper and pencil. I will incorporate both techniques. I will remain open minded. I am not the typical student, nor am I the typical maintenance worker. Connecting the TI-85 to the computer in the shop will be like opening a door to another universe. During breaks I can explore the potential usefulness in having the TI-85/LINK-85/SHOPCOMP. I am not "above" the math department at Brookdale. I am a hungry mind silently fascinated with daily discoveries.

T 23.82

mathematical level.

Now, the hypotheses:

HYPOTHESIS #1: The Paranoid Hypothesis

→ There is a very slight possibility that my intelligence is dangerously high, so high in fact that it has the ability to figure out that life is simply not worth living. Therefore, to protect my biological organism and society as a whole from my intellect, my organism is being kept content and harmless within the maintenance department of the State Park Service.

→ If this is the case, what harm would it be to have this specimen receive an education in advanced mathematics? Well, we wouldn't want this mind to have access to impressionable youth.

→ What harm would it be to have this mind take one mathematics course per semester over the next 70 years? No harm at all, but why would anyone want to study mathematics for so long only to be a fifty year old retired janitor with a bachelors degree in mathematics?

→ The degree is not the point. The point is that even though this mind is limited by lack of education, it

does not mean this mind will not instinctively pursue education to satisfy its desire to understand.

• What do I honestly think about the Paranoid Hypothesis?

→ I think that my organism suffers from identifying its worth by its job in society, and to compensate for being a lazy state maintenance worker, it wants to create an alter ego, a secret identity. This 'secret identity' is the mathematician, the philosopher, the deep thinker.

→ But the deep thinking philosopher-mathematician is of no more use to INDUSTRY and TECHNOLOGY than is the park janitor. And this leads to a more sober hypothesis, one that focuses on the fact that whatever my identity is it is hostile toward's sacrificing its entire life to society.

There may be great mathematicians who apply their knowledge toward practical ends in science and technology, but there are plenty of mathematicians who are far removed from technology, who only engage in mathematics for the pleasure they experience in working in an abstract world.

a million miles away from anything vaguely resembling the real world.

HYPOTHESIS #2: The Lone Wolf Hypothesis

- Just because a human organism may be inclined towards mathematics, even inclined to experience aesthetic pleasure and deep satisfaction in mathematizing, does not automatically put it in league with modern technology, industry, and financial success.
- If one develops a hostile philosophy toward the nature of society and existence in general, one will sabotage any chance at having to sacrifice its mind for the company.
- My mind may reflect deeper more of $ax+b$ upon the graph of the professional mathematicians or scientist simply because it is not caught up in all the bullshit of that segment of society.
- Society has its cloistered monks, but there are always those isolated cases who do not need the structure of the monastery to live as a monk. There are those great minds who peer out of a beggar's eyes.

• I am much more comfortable with this hypothesis, as it soberly proclaims that my organism is exactly where it wants to be, far ~~removed~~ enough removed from the meaningless, futile goings on of the professionals so as to approach the ~~mythical~~ esoteric symbols slowly.

• Why must everyone fall victim to the desire for financial success, public recognition? Why must there be a reward?

Is not MATHEMATICS ITSELF, and the gradual illumination that occurs while studying it, reward enough?

• Must a human organism be canonized as a "mathematician" in order to enter the realm of mathematics?

• Must one be certified as a philosopher or psychologist in order to engage in deep thinking?

• These are the two hypotheses; the latter being the more realistic, but there is one more hypothesis to be discussed. It is different from the first two because it aims at finding the answer to the question: Am I more concerned with mathematics itself or the identity of the mathematician?

professionals

17:1 My philosophy keeps my head together

- A philosophy of life some people call it. All it is is a way of thinking, a way of responding to the environment one finds oneself in. Environment is the independent variable, and one's philosophy is the dependent variable - it depends on what stimuli are coming in from the environment.
- Using M. symbols, we let $f(x)$ = Life philosophy, where x , the variable, is any given environment.
- I think at the core of one's being there may be a central philosophical "way of thinking", such as pessimism, but one creates one's philosophy as one encounters pain and boredom.
- One would create a philosophy to deal with incarceration, and it (the philosophy) could be similar to the philosophy he uses to get through work each day, but it would vary in small degrees depending on outside stimuli.
- My philosophy in the environment of being a state worker housed in the Turk House right next to the shop with Sherry as a female partner/companion ... I think

my philosophy does not include alot of pressure to achieve financial success. I think as long as I store food in the kitchen, I am doing fine. In fact, my detachment from that "got to earn more money" syndrome enables me to study math in my free time.

(I will continue later. It is a workday)

↑ 32.79

↑ 32.33

° My philosophy allowed me to calmly coast through the work day. I was able to maintain a high degree of contentment, and with help I managed to get some more of the links up from the park.

° I am home from work and quite content to sit here writing in my diary, reading T.H. Huxley, calmly moving towards an evening of mathematical explorative activity.

° I am pleased as a result of a conversation Sherry and I were engaged in about "what to do about the question of religion with reference to potential children". We both agree that we do not want to have our offspring branded by a creed. We are against any form of baptism into any given religious institution. This is liberating, knowing that we will not be pressured into a religion, nor pressured to subject our offspring to religious dogma.

• As I begin to understand just how fortunate I have been to end up here at MBSP in the Tarz House, I also realize that my income will be a limiting factor. I cannot afford to purchase a computer because this purchase would wipe out both my checking and savings accounts. I would really enjoy having a computer, but even though the shop computer is primitive, I may be able to utilize it with the LINK-85.

I can also use it for personal things such as phone # lists, address lists, bank account balances, benefit time balances, etc... Very personal material can be kept on disk in the word processor. *

• My philosophy deals with the monetary earnings potential being so weak by relaxing, and by justifying a calm state of mind concerning work. I allow my organic mechanism to take the path of least resistance. I try not to worry.

• My philosophy will also enable me to attend college at night without pressuring myself to take alot of courses at once. In other words, I can go to school for aesthetic pleasure, and not to get a higher position in society. My philosophy justifies this reasoning.

Interlude X₂₉ 19 May 1994 7h 15m

- I wake up in a foul mood every day. Can I honestly say "every day"? No, let me rephrase that: I wake up in a foul mood on mornings of a work day. This morning Sherry got up with me, and I was a bit grouchy towards her. Things get under my skin.
- Now. Realistically, I suppose a man would want to develop skills in the area of his line of work, and because I am a park maintenance worker, one would assume I would want to learn how to repair lawnmowers, tractors, motor vehicles; one would assume I wanted to learn carpentry, learn how to weld, learn electrical work, plumbing etc.
- No, although I would enjoy learning a bit of each of these "along the way" I am not concerned with becoming a master of a trade nor a very skilled maintenance worker. A boiler license? No thank you. I would rather try to get an Associates Degree.
- Why am I obsessed with working towards an associates, then a Bachelors, degree? I could be 40 years old by then. I want to be removed from heavy physical labor before I am 50. I don't mind being poor.

- As a poor, yet intelligent, man, one would think I would seek ways to be of better service to "the master, the lordship, etc." Although I am grateful for being housed by the State Park Service, I am a disagreeable man who does not like people. I will stubbornly pursue mathematics and philosophy. Even if someone is a master carpenter, I can honestly believe myself to be more intelligent than he. My intellect may be so developed that I concern myself with the universal, not to be specializing in one area.

- The tremendous technological advances made by our civilization are the product of specialization. Although our civilization may become a superorganism that will float off the planet to colonize planets out ~~of~~ ^{of} ~~the~~ ^{our} solar system, I am not really impressed by the prospects.

- Sherry is now bitching at me to eat a breakfast, I did not ask her to make, thereby robbing me of my precious few private moments.

7011

Interlude α_{30} 21 May 1994 23h 35m

- Am I getting older? I am starting to accept my lot in life. It really isn't too bad. I have enough to eat, a job with a house to dwell in as long as I remain an employee, a female companion, etc..
- So, why am I studying mathematics instead of learning how to weld and repair lawn mowers and boilers? Who knows?
- I don't have to understand why. I will go to bed, sleep for six hours, and get up to go to work. I will accept being a worker who studies math in his free time. I guess I just enjoy learning, I enjoy the process of developing my understanding.

Interlude α_{31} 22 May 1994 17h 30m

- This morning I woke up in a foul mood as usual. I felt like a monkey in a cage being corralled into its work station. Even within my usual foul mood I could see things objectively. I realize that it is my human nature that makes me irritable when I have to push myself to work.

30 MAY 1994 Monday

think
to be
meditation,
be able
ward.

stories
lives from
ext.

file #'s.

Schopenhauer said throughout his life that if he had not attained financial independence through his father's inheritance, he would never have completed his life work. I want to write now, but I am unable to do so because I have to go to work. I would also like to read, but because I have to go to work, I have no time for that either. I may have to settle for writing diary-like entries throughout my life.

Non compos mentis will be a formal Diary of a Madman, and I will then focus on Essays, but I think these essays will be categorized, whereas Non Compos Mentis I will flow like these writings, Interludes.

What need do I have of the Diary of a Madman then? It is 8 AM. I will work this out in my head while cleaning toilets!

I have an idea to limit myself to three basic outlets for writing. One will be of course, these writings, called Interludes. These will be handwritten entries. Next, I will have Non Compos Mentis: Diary of A Madman. As of now NCM:DM has replaced what was Thought Experiments and Daily Reverie; but what I really want to do is go through the TE's and sort them out between NCM and ESSAYS.

1 June 1994 Wednesday

Just write. Do not worry about what others think of you. Do not compete with Schopenhauer. The great philosophers had much leisure, whereas my days are filled with toil, daily drudgery, and no hope of publishing anything, I write.

I am financially dependent upon work to live.

Although I will keep files open for writing essays and poems, my Magnum Opus will be a humble series of writing sessions, automatic writing, verbalized stream of consciousness.

It is not a work that I will just begin. It is going to consist of entries written as far back as 1988; I will take entries from my earlier writings that have a reflective quality to them.

Anything I presently write in these hardcover diaries could end up in MEDITATIONS: Reflections on the human condition.

I really don't know what to call it.

What about keeping my head together? What about trying to convince myself that just because I don't have a college education and I ~~clear~~ am janitor does not make me a moron.

As for essays, they will come forth gradually.

Another idea (quickly written because it is 0755 hours), I want to be the philosopher of the intellectual laborer.

I do not want to be the philosopher of the working class. I want to write my philosophy of life, which will use Schopenhauer as its main influence, but will mention my problem with thinkers born into financial independence.

I want to make clear that a philosophy is created so that an individual's psyche can deal with its conditions. I am in more need of philosophy than Schopenhauer.

at this point I see three separate writing projects besides these interludes.

ESSAYS

MY PHILOSOPHY (philosophy as a coping mechanism)

Diary of A Madman, Thought Experiments, etc...
I haven't decided on a title yet, but it will be a stream of consciousness.

The fundamental problem of philosophy is judging whether or not life is worth living. Therefore there is only one truly serious problem of philosophy - and that is suicide.

On the tractor I tried to decide where to go with my writings. I have decided that interludes fill time between existence and philosophizing.

No. I will call my handwritten writings done in spiral notebooks or hardcover diaries NOTES.

I will create another work that will consist of several volumes of diary material. I will use a special volume for present writings. This work will be called Notes On My Existence.

I will create another work for creating my verbalized philosophy of life, called (The Problem is Existence)

I may create ESSAYS and POEMS but I think I will concentrate on the above mentioned. I can call this diary NOTES α (alpha).

diaries = NOTES

stream of consciousness = Notes On My Existence

philosophical work = ~~The Existence Dilemma~~

EXISTENCE ITSELF AS THE PRIMARY PROBLEM
~~Meditative~~ Philosophic Meditations On The Human Condition

2 June 1994 Thursday

7h 52m

I wake up not knowing why I even bother to write. I cannot possibly be writing so as to be read after I die, for my individual identity is 'quite insignificant'.

And yet, through and beyond time, Schopenhauer reached my mind!
Behold the written word!
Behold the written verbalizations of an ordering life form.

I do not want to die only because I was born. Were I never to be born, death would not repel me. ~~But~~ Because of the indestructable nature of the thing-in-itself, it is only ~~the~~ the phenomenon of individuality that fears the death of ego.

Each life form is the manifestation of the will to live.
It is 0759.50 hours and I am being dragged off to the fields to ~~work~~ by psychological forces compelling me to secure biological existence in the form of WORKING FOR A LIVING.

all it took to set my hypertrophied consciousness off, I was for a couple of the higher echelon heads to look at me with shit eating grins on. This triggered in me feelings of revulsion, anger, indignancy. I wanted to question them as to what they were smirking at, but I bit my tongue. After all, I could be just paranoid, over sensitive.

When Claude came by the shop, Bill albeit insinuated that I was an unskilled monkey. Fuck him and Claude! I am not skilled as a carpenter nor as a mechanic, nor as a plumber, nor as an electrician. I am a fucking scholar TRAPPED in this cock sucking role as a laborer.

I just want to write, and to study higher mathematics. I have a rich inner life. I wish I were financially independent so that I wouldn't have to work at all!

I want to write not only a philosophic work, but also a series of chaotic sessions of psycho babble.

Notes = Psychobabble

Existence Itself As The Primary Problem = philosophic work
Notes On My Existence = excerpts.

What else? My story? A daily account with detail.

~~The Intellectual Laborer~~
An Intellectual Laborer

8 JUNE 1994 Wednesday

7h 45m

I have not done any formal writing since I reorganized my writing projects. It is too much like work. Basically I have just been keeping my head together, getting work done at the park, cleaning the house when home, and reading a little.

I feel nervous about going back to school in September. It is only one course, so I will have enough time after work to study. Again I ask myself why. I wonder I am perplexed by the human condition. I am disturbed by many things.

My existence today seems defined by my employment and residency at MBSP.

One seasonal worker, Dale Crane, and I are becoming friends. Well, we are both of the morbid, cynical, solitary, pessimistic temperament.

I am thinking of scratching the idea of writing *Philosophic & Meditations of a Schopenhauer Describer*. I think I may make *The Book of Wonders* my main work, my MAGNUM OPUS.

I may get ahold of Cioran's book. That is how I want to write *The Book of Wonders*, or will I call it *Notes From The Abyss*?

14 JUNE 1994 Tuesday

7h 40m

Living here in the Tark House, working for MBSP, reminds me of Wharton Tract Unit, a minimum security prison out in the middle of Wharton State Forest. I have the freedom to go to the foodstore, the theater, the beach etc... I have a female companion living with me. I am free to go to the bookstore. These little things mean alot. I have privacy. I am not oppressed by the immediate presence of the undesirable society found in prison.

I sense the R2 Regional Superintendent is concerned about the length of my hair, as well as the length of the grass along rt 522. I bet he never once stops to wonder about what it is like sitting on the Tractor in 90° weather.

We are living in this Perfect Day, but we are in a primitive stage of its development. ECONOMICS control us. I would be content in my position, but there is no long term security, nor is there intellectual stimulation.

I will be going to college, one course per term, starting in September, primarily for the stimulation of my mental faculties.

While I am bright enough to manipulate mathematical symbols following the laws of thought, I am only dimly aware of the bars of the cage I have been trapped in.

I want to make one thing very clear to myself. Rising in the hierarchy of economic status will no more free me from this penal colony than switching sectors in an actual prison. Paul Sedor, the Regional superintendent, is as much a slave/prisoner as I am, may be even more so. Some prisoners have more liberty than others.

This is why I treat each seasonal with respect and compassion. I see them as fellow sufferers, fellow prisoners... comrades.

17 JUNE 1994 Thursday

01h 30m

being overworked at shop
been giving too much lately

what is this difference in writing?

Whatever does not kill you
makes you stronger

Is this true?

My back aches.

I am hyper sensitive with a hypertrophied consciousness!

My head is exhausted.



Some of my thoughts are as follows:

I wonder: what is happening to my organism? Is it so overburdened by the physical toil of ~~every~~ daily existence that it is choosing to numb itself again?

Will this have an effect on my academic progress?

Why is death always so near?

I will crawl into bed and die...

19 JUNE 1994 Sunday

9h 30m

I went to the emergency room last night because of severe pains in my side. It turns out I have renal colic (kidney stones). I will be out of work for three days. Now I will purchase the painkillers, continue to strain my urine, and get back into mathematics.

This is a good opportunity to start reviewing the Calculus for MTH-171.

15h 0m

The drug prescribed to me is not enough to kill the pain. I can not do anything but lay in bed doubled over in pain. I am nauseous and cannot eat.

This attack on my organism by the renal colic is sure to change my psyche. There need not be any dramatic changes. Even the most microscopic changes have their effect upon the entire universe.

There is paradox. Nothing really matters, and yet everything leaves impressions and causes effects.

This attack of renal colic happened to hit me at the worst / best time. My organism is being overworked with this sign project, and this week we are preparing for the Battle of Monmouth.

I suddenly have dropped out of the picture. I told the superintendant that I would be back by Wednesday morning, but I am recognizing the situation. Even if I were to be diagnosed tomorrow by Canto, will I be ready to return to work Wednesday? If I am unable to return to work Wednesday, why push myself to go in Thursday?

Surely I would not work overtime on Friday or Saturday after being out sick all week!

I will either return to work Thursday, or I will be out until Sunday.

When the pain is severe, I will be bedridden, but during the interludes when the pain subsides, I may slowly review the Calculus with care and inner calm.

15m

I went to Freehold Radiology with Sherry at 1100 hours to pick up my x-rays. We drove all the way to East Brunswick to see a Dr. Brody. This urologist verified that I did in fact have a kidney stone, but he advised me to only take the medication when the pain was intense. He also encouraged me to return to work tomorrow. He wants me to pass this kidney stone on my own. I will bring the strainer to work with me - and I will drink plenty of water throughout the day. If I do not pass the stones by Friday, I will make an appointment for Monday to have IVP x-rays done.

I am disappointed that I have to return to work with this pain in my side, but it all confirms my pessimistic philosophy. I am in the penal colony of existence. There is no need to write a book about it.

I will simply study math to pass my time, and I will take excerpts from my desires. Notes From The Abyss will simply be a collection of Epigrams.

1994 Wednesday

45m

I worked today even with this kidney stone. Surprisingly, I felt fine all day. We were very productive. I only urinated three times during the work day, which means I did not drink enough water.

The situation at Monmouth Battlefield is a little ridiculous, but it will pass in time. I am not alone, nor will I pressure myself to meet deadlines. Whatever we get done, we get done.

We are almost prepared for The Battle of Monmouth Reenactment. I work tomorrow, then I have Friday off. If I don't pass the kidney stone by Friday afternoon, I will call Detroit to find out where to get the IVP done. I will take a sick day Monday if need be.

Tonight I will relax. How do I relax? I read philosophy/mathematics, I nap/sleep, and I may even practice some manipulation of numbers.

I took a pain killer at 1800 hours.

23 JUNE 1994 Thursday

21h 15m

I am ~~is~~ suddenly in pain again. I don't think that doctor (Brody) knows what the fuck he's talking about. I worked like a slave today, like the slave that I am.

My mother was in the hospital last night. She had sun stroke and lay on a stretcher in the hallway of a mossy emergency room all night with an IV sticking out of her. She nearly died.

I got a ride with Bill Albert to Spring Lake, then I drove her car back to Freehold for her.

When I got home (after a shower), I took The World As Will and Representation; Volume Two from the shelf and looked up time in the extensive index. While seeking, I came across a passage on how to promote cerebral nervous activity in one's organism.

Schopenhauer says that in order to ~~promote~~ enhance the susceptibility of the cerebral nervous system without the excitation of any passion, "one must calm down."

Let us think not of alcoholic drinks or opium; on the contrary, what is required is a peaceful night's sleep, a cold bath, and everything that furnishes brain-activity with an unforced ascendancy ~~by~~ ~~calming down~~ by a calming down of the blood circulation ~~of~~ ~~of~~ and of the passionate nature. It is especially these natural means of promoting cerebral nervous activity which have the effect, the better, of course, the more developed and energetic the brain is in general, of making the object more and more detached from the subject, and which finally produce that state of pure objectivity of perception.

"Such a state of itself eliminates the will from consciousness, and in it all things stand before us with enhanced clearness and distinctness, so that we are almost alone OF THEM and hardly at all OF OURSELVES. Therefor our whole consciousness is hardly anything more than the medium through which the perceived object appears in the world as representation."

What?

1994.08.03

1994: 0805-2130

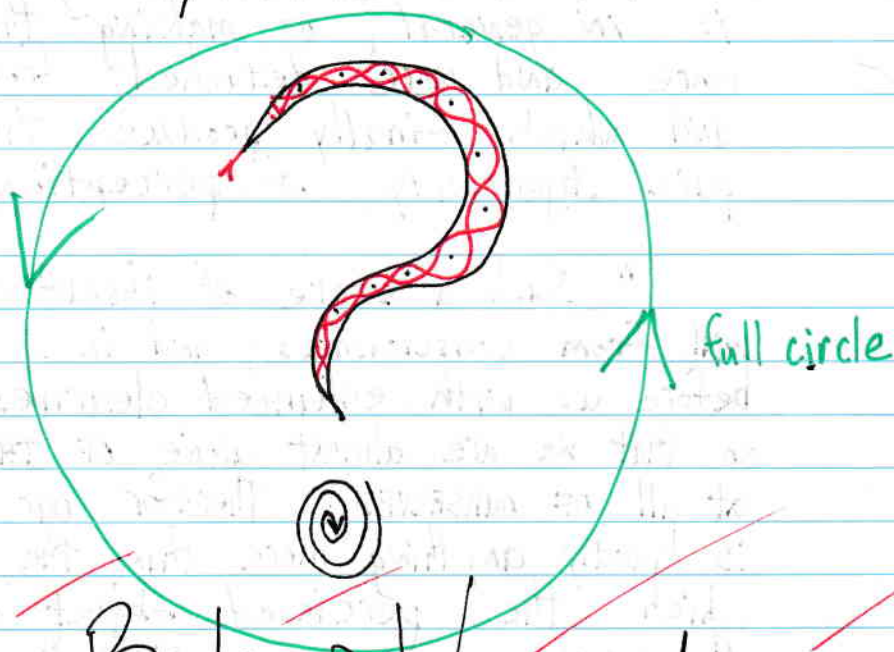
pizza for dinner, pizza for lunch,
peanut butter and jelly for breakfast ...
much work completed
much work

picking out compact disks with woman
jimi hendrix electric lady land for me
Nine inch nails and techno coolie for She
much work

my being hopes to create a work
a magnum opus of an amateur
diary of a madman
from notebooks to disk

woman is with head doctor
she has pains in her head
she worries about the smoke
thinks life's becoming a joke

too much the hinders
clear mind for math
or experience WONDER'S WRATH!



~~The Book of WONDER AWAKENED~~

... 1983

summer of

19th year: $27-19=8$

$1994-8=1986$ basement Bradley Dr.

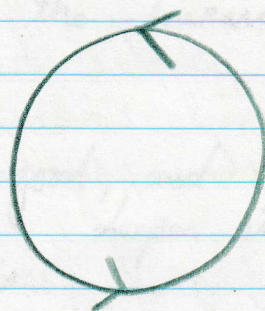
EXPERIMENTS IN PSYCHIC HONESTY

segment of
Loop α
Wave 1: Calculus Connections



FOOTPRINTS OF MY PSYCHE,

A full circle beginning



How terrible must things get before people
start developing suicidal tendencies?

I may have made a mistake telling Sherry
that people should kill themselves. She
has deep rooted suicidal reactions just below
her happy face exterior. If you took
the trouble to read fading pencil scratches
in a HERETIC'S DIARY, then you are
with me. If not, I am here all by my
lonesome, way down deep in the abyss
of MENTAL FREEDOM, and mental freedom
in some cultures is INSANITY.

1994.10.12

Although I have lent my nephew my personal
Algebra Text, the EC-4023, and my copy
of The Art of Mathematics, I was attacked
by his father < sister's husband > for
sneaking my nephew a photocopy of
Bertrand Russell's AM I an Atheist or An Agnostic?

I sought Sherry's assistance in resolving the
issue as I had hung up on my
sister while she emotionally defended her
"feelings" = "beliefs". After speaking
to Sherry, I called to apologize to
my sister; but I do not want to discuss
it with Joe - as he is on the verge
of a nervous breakdown,

OK Tami. Your husband is working himself
to death, and you want Sherry and I
to have children?

Sherry left for the evening after I screamed
at the top of my lungs, "I want
to rest! I am sick! I don't
want this stress! If you have to take a drive
in the car in order for me to get some

rest, then fucking go!" Needless to say she followed suit and I am left here worrying that she may die out there, and then at this instant I would forever burn into my consciousness, and the bottle would tempt me.

More probable is the possibility that Sherry is tired of being up in the air about marriage, tired of being deprived of sexual fulfillment, tired of my smoking pot and FIGHTING THE WORLD; she also made it clear to me that she was sick and tired of this jew thing.

Sherry is all talk. She hates these people around Manalapan and it's clogging the arteries of our local roads, and yet dare I form a hypothesis that the population explosion will have grave consequences, I am then called sick.

Sherry came home and is in bed, but I have experienced some PATTERNS OF INTELLECT, some ideas (memes) that are now resonating in my brain, causing waves of meaning to flow within my mental world.

I want to fight for my Mental Freedom, but I also want to secure my biological existence. I am attached to this creature, Sherry. She comforts me. I am not able to keep up with her sexual demands. Some evenings I am absorbed in my own inner experiences so deeply that Sherry is basically alone.

Writing in hardcover diaries with a mechanical pencil is a great discovery. This will enable me to

more in less space, therefore making the \$30.00 investment on the book itself a worthy expenditure.

It is true that the officers in the prison system are not qualified to judge my "mental nature".

I am somewhat distressed at being dependent upon a society, a civilization, an empire that is so very dependent upon oil.

The way I see it, we are living on borrowed time. The time I have stayed at MBSP has been a relief. I have grown comfortable with my WAYS OF THINKING. I have had my hair cut short as a symbol of my dependency upon my present job.

My present lifestyle would be hard to find out there in private industry. I consider myself fortunate, and I hope to live here for years.

Living here in the Tank House like a junkyard dog or a work horse farm animal, I have developed methods of escaping from being trapped into a stereotypical role. I will not play the role of the humble carpenter!

I recognize no natural tendencies, I am fascinated with numbers, and I will pursue higher mathematics even if it means becoming a parasitical organism surviving. I use my brain each and every moment.

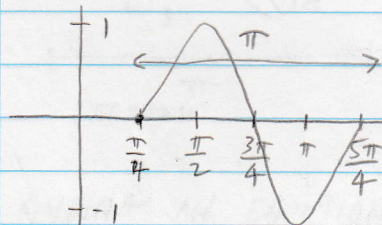
10:14:1530:

I want to make some notes in "X" that are parallel to Brainwaves Spiral Notebook "ZERO". I am presently, very slowly going through index cards for ch 1 and 2, writing my analysis in BW-0. Here are some fundamental observations worth RECORDING IN "BOOK X".

EXAMPLE: sketch $y = \sin(2x - \pi/2)$

INVESTIGATE: period of $\sin x$ is 2π
period of $\sin(2x - \pi/2)$ is $\frac{2\pi}{2} = \pi$

PHASE SHIFT: starting point when ARGUMENT = 0
when $2x - \pi/2 = 0$
 $2x = \pi/2$
 $x = \pi/4$ start at, increments of



why is period = π ?

I will explore the proofs in TRIGONOMETRIC MEDITATIONS

TRIGONOMETRIC MEDITATIONS of X π 0

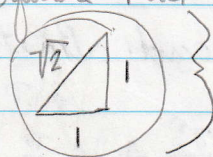
SESSION 001 14 OCTOBER 1994 FRIDAY AFTERNOON

CONDITION: OFF FROM LABOR; FREE TIME \Leftrightarrow Operation: Math Path

introducing MATH PATH in The Seasons of the Abyss section of X. MATH PATH \in (hardcover books, spiral notebooks).

Math Path is the bridge between X and 0, between B and 1. How I will introduce such an entry (session, if you will), is to write a symbol conveying that I will be OBSESSING WITH MATHEMATICS AS DICTATED BY THE PROMPTINGS OF MY BLOOD, BONES, AND GREY MATTER,

The symbol header for Math Path Sessions will be $\sqrt{2} \Leftrightarrow$ the square root of 2, or better still



} symbolizes the creative dynamic quality in mathematics (intellect) Intuitive Intelligence (ii.) TRUTH



MATH PATH SESSION #001

14 OCTOBER 1994 FRIDAY DUSK

1800 HOURS

Trigonometric Graphs

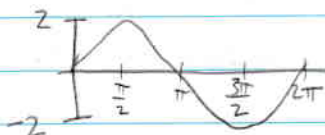
$$y = a \sin(bx+c)$$

$$Y = A \sin(BX+C)$$

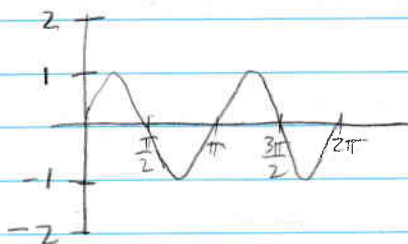
$$y = a \cos(bx+c)$$

$$Y = A \cos(BX+C)$$

$$Y = 2 \sin(X)$$



$$Y = \sin(2X)$$



$$\text{PERIOD} = \frac{2\pi}{|B|} = \frac{2\pi}{2} = \pi$$

example: amplitude and period of $Y = 2 \sin(-3X)$

$$\sin(-3X) = -\sin 3X \therefore Y = -2 \sin(3X)$$

The amplitude is $|A| = |-2| = 2$

$$\text{The period is } \frac{2\pi}{|B|} = \frac{2\pi}{|-3|} = \frac{2\pi}{3}$$

IF $Y = A \sin(BX+C)$ or $Y = A \cos(BX+C)$,

AMPLITUDE is $|A|$ and PERIOD is $\frac{2\pi}{|B|}$

The phase shift and an interval containing exactly one cycle can be found by solving the two equations

$$BX+C=0 \text{ and } BX+C=2\pi$$

example $y = 3 \sin(2x + \pi/2)$

$A = 3$ amplitude is $|3| = 3$

$B = 2$ period is $2\pi/|2| = \pi$

$C = \pi/2$ $Bx + C = 0$; $Bx + C = 2\pi$

$2x + \frac{\pi}{2} = 0$

$2x + \frac{\pi}{2} = 2\pi$

$2x = -\pi/2$

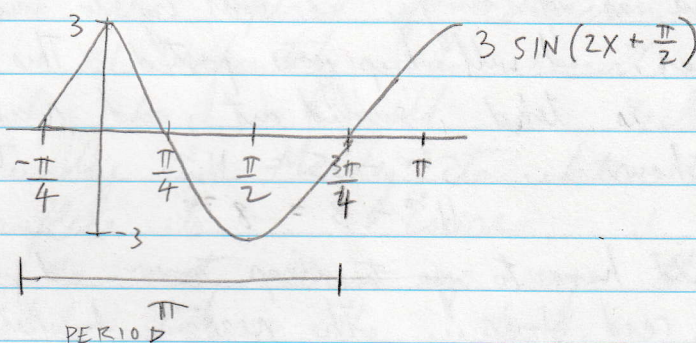
$2x = +\frac{3\pi}{2}$

$x = \frac{-\pi/2}{2} = -\frac{\pi}{4}$

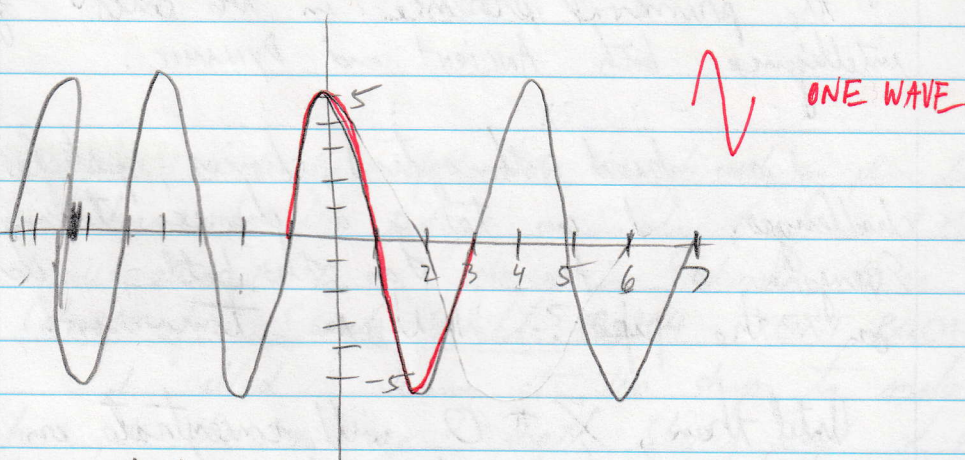
$x = \frac{3\pi}{4}$

INTERPRETATION OF DATA:

The phase shift is $-\pi/4$, and one sine wave of amplitude 3 occurs on the interval $[-\pi/4, 3\pi/4]$



FINDING AN EQUATION FOR A SINE WAVE



amplitude = 5

one wave occurs on the interval of $[-1, 3]$,
the period is $3 - (-1) = 4$

$\frac{2\pi}{|B|} = 4$

$2\pi = 4B$
 $B = \frac{\pi}{2}$

PHASE SHIFT IS $-C/B$ or $-C/(\pi/2)$

$-1 = -\frac{C}{\pi/2}$ or $C = \frac{\pi}{2}$

$y = 5 \sin\left(\frac{\pi}{2}x + \frac{3\pi}{2}\right)$

end it $\sqrt{2}$



1994:1027: 1800: \ Thank you Roger Taylor for creating HAPPINESS?
 It is a welcomed blessing that I will
 treasure, share, and absorb. I am determined
 to get ahold of a copy tonight for nephew.
 I will distribute cassette copies to Tami,
 Keith, and yes, even Walter. I do have soul.
 May be Jimmy will even get a copy after I
 get more money to stock up
 on QUALITY blank tapes.

I am a peaceful, honest pot smoking creature.
 COFFEE MADNESS!!!

10 28: 17 30: \ revelation # 0000

" $2/3 \approx 0.666$ "

: \ revelation # 0001

" The problems of maxima and minima play an extremely
 important STRUCTURAL, PSYCHE-LOGICAL, and SEMANTIC
 role in our lives.

Greek symbols : domain of titles for REVELATION RECORDS :

#	predicted age			
1	27	α	alpha	Δ
2	28	β	beta	
3	30	γ	gamma	
4	31	δ	delta	Δ
5	32	ϵ	epsilon	
6	33	ζ	zeta	
7	34	η	eta	
8	35	θ	theta	
9	36	ι	iota	
10	37	κ	kappa	
11	38	λ	lambda	
12	39	μ	mu - MU	
13	40	ν	NU	
14	41	ξ	xi	
15	42	\omicron	omicron	
16	43	π	pi	
17	44	ρ	rho	
18	45	σ	sigma	
19	46	τ	tau	
20	47	υ	upsilon	
21	48	ϕ	phi	
22	49	χ	chi	
23	50	ψ	psi	
24	51	ω	omega	

A SERIES OF THE DIARIES OF ~~⊗~~
WITH Satellites : BRAINWAVES
(spiral notebooks)

1994: 11 11: 16 00 : \ REVELATION IN PENCIL # 0010

R=10

Arthur Schopenhauer did an excellent job unifying eastern and western philosophy. I accept his works as a pseudo-biblical doctrine. I don't think I could advance philosophy by interpreting his works. One must go to the source. All I can do is point. As for calculus and my interests in exploring Terzyski's Science and Sanitas. now this is a worthwhile undertaking.

1994:12 17:0030: \ The first fundamental theorem of calculus states: $F(x)$ is an antiderivative of $f(x)$ if $F'(x) = f(x)$.

This is how I would state it on a test:

1st Fundamental Theorem of Calculus

Hypothesis: f is a continuous function such that $A(x) = \int_a^x f(t) dt$ exists for every real number $a \leq x \leq b$.

Conclusion: if $a \leq x \leq b$ then $A'(x) = f(x)$

This gives a way to find an antiderivative of a function. If we know f , we can recover F by using $F(x) = \int_a^x f(t) dt$

2nd Fundamental Theorem of Calculus

Hypothesis: F is any antiderivative of the function f .

Conclusion: $\int_a^b f(x) dx = F(b) - F(a)$

This theorem says that to compute the definite integral of a function f over an interval $[a, b]$ is to first find an antiderivative F for the function, then simply take the difference of its values at the endpoints: $F(b) - F(a)$

FACTS:

$$\frac{d}{dx} \ln(x) = \frac{1}{x}$$

$$\frac{d}{dx} \tan^{-1}(x) = \frac{1}{1+x^2}$$

$$\frac{d}{dx} \sin^{-1}(x) = \frac{1}{\sqrt{1-x^2}}$$

$$\int \frac{1}{x} dx = \ln(x)$$

$$\int \frac{1}{1+x^2} dx = \tan^{-1}(x)$$

$$\int \frac{1}{\sqrt{1-x^2}} dx = \sin^{-1}(x)$$

My last words with teacher Jay Deshabandu were significant. I asked him if he were sure I should study Computer Science instead of Theoretical Mathematics.

He said, "What we see with Converge, when it finds the definite integral and it displays a graphical representation of the area under the curve, this is what the THEORETICAL MATHEMATICIAN sees with his mind! Apply your mathematical intuition to scientific programming. Work as hard as you have in this class, and you will do well."

Calculus II is not more challenging than Calculus I. Calculus I is the more challenging because it is the more fundamental. It is the FOUNDATION. You have a strong foundation on which to develop your SKILLS and TECHNIQUES."

That is the word, the key concept in my declaring myself a student of Computer Science : SKILL. The discipline of pure theoretical mathematics is a higher realm of truth that I will continue to explore as a human organism, but as an organism caught up in the web of modern civilization, being economically controlled as it were, I am in a common predicament.

Potential... NO time or money for school.
∴ I will put MY ALL into becoming a skilled, organized, scientific computer programmer. I will MERGE with the MACHINE-IN-ITSELF. MHIP

I will apply the philosophy of vagueness to computer science.

In other words, I am not a Computer scientist who studies fuzzy thinking on the side.

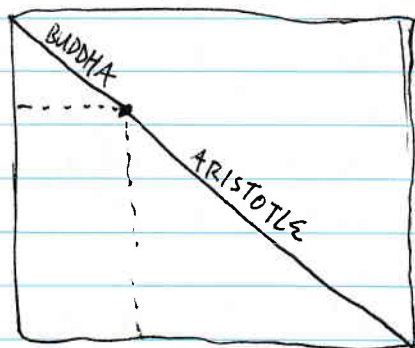
Ironically, I am a fuzzy thinker who wants to apply his vague philosophy to computer science.

It feels right.

A (1,3,5)
B (2,3,4,5)

$A \cap B: (3,5)$
 $A \cup B: (1,2,3,4,5)$

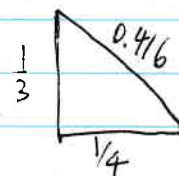
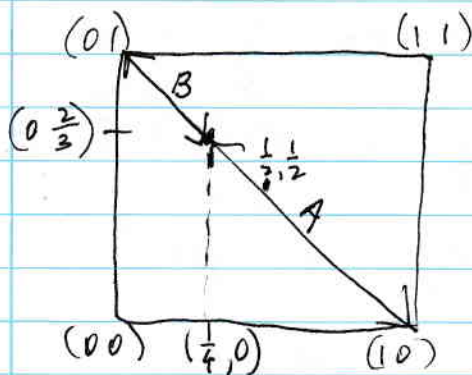
(1,2,4)?



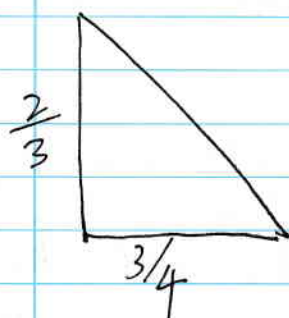
BUDDHA
ARISTOTLE

A AND NOT-A
A OR NOT-A

$$\frac{0 < x < 1}{0 \text{ OR } 1}$$



$$\sqrt{\left(\frac{1}{3}\right)^2 + \left(\frac{1}{4}\right)^2} \approx 0.416$$



$$\sqrt{\left(\frac{2}{3}\right)^2 + \left(\frac{3}{4}\right)^2} \approx 100\% ?$$

YES! $100\% = 1 = A$

\therefore IF $B = 0.416$

AND $B \neq A = \text{VAGUENESS ENTROPY}$

Then $f_2 = B$

artist

The Fuzzy Entropy Theorem gives the entropy $E(A)$ of fuzzy set A as the RATIO of the counted overlap or "intersection" $A \cap A^c$ to the counted underlap or "UNION" $A \cup A^c$.

$$\frac{[A] \text{ AND } [\text{not-}A]}{[A] \text{ OR } [\text{not-}A]} \quad E(A) = \frac{c(A \cap A^c)}{c(A \cup A^c)} = \frac{\text{Intersection}}{\text{Union}}$$

A^c denotes the complement of A or the set not- A .

with NONfuzzy (binary) sets, the overlap is empty and so the numerator equals zero.

with fuzzy sets there is overlap and the numerator is always greater than zero.

\therefore FUZZINESS = VAGUENESS = MULTIVALENCE
= multivalued logic begins where Western logic ends

This at once presents the individual fuzzy thinker with a challenge: OVERTHROW THE STATUS-QUO.

Revolt against binary programming?

Revolt against this bivalent tendency enforced by ~~the~~ western civilization.

So, I do not claim to be on the road to becoming an engineer, but I do not think it is too far fetched to become a FUZZY PROGRAMMER by the time I retire from the State Park Service!

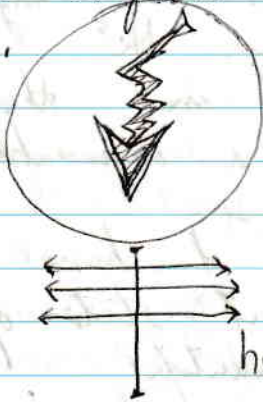
I will learn several binary programming languages over the next four years, and then I will apply my philosophy to my own personal computer science projects. MENTAL FREEDOM REIGNS

py

12/25/83
Too much has changed in one year to write here, but let us remember the Winter of 1995 as the year I took Calculus II at Brookdale and did ~~quite~~ very well.

We are at the half way point, and I am feeling pressured by my organizing - as a whole to confront these feelings I experience.

When I was 16, I thought about becoming a FRANCISCAN FRIAR following Francis of Assisi.



Now, TWELVE years later, I am struck by the NAMESAKE... and I hesitate... for the fear of the unknown.

What is to become belongs to the Unknown.

I can estimate.

I can make predictions.

That is all.

I will be alone before...

She, the universal female essence, will demand a Mourning period of transition... to give me a taste of the humbling loneliness of existence.

I will purify my mind of ill will.

There would be many demands made.

I predict there will be religious disagreements, but I may surprise myself... I may convert others to a more surrealist world view.

Catholicism.

It has captured many souls.

I will battle God? How could I win unless I were an illuminated being myself?

1995 03 25 Saturday 8PM

Honesty prevails. All that reading Schopenhauer benefited this young man. All I can see before me is a productive day with Tom, Francis, and Wilhelm in the Math Lab. I feel I am a key unit in an experiment. My progress will be recognized, I want to get my head together.

Jay Deshabundh is a great teacher. I have let it be known it is he who talked me into pursuing Computer Science as a major. My meeting Francis was another crucial link in this intellectual adventure.

I recieved positive signals, telling me that this decision will be recognized as the freeing process. I confessed the human reaction of clinging, questioning the motives behind the clinging.

I do not want a dependent. I want a partner. I usually work alone, but Francis is a sharp individual. I found myself barely able to restrain my nostrils from flaring, breathing in a scent that had me wanting to dive between her thighs. I was able to decide for certain that I will try to remain a single man so as to be able to at least court Francis while she is in the United States, these hectic, fast paced states.

She will be going back to Costa Rica, and I have caught a small glimmer of hope that I could drop everything in 10 years and go with her!

Francis is an image representing something I desire
her entire "way of being" mesmerizes me.
I struggled to help her with Test 2 material,
and she was relieved to begin to
understand it. I am beginning to wonder
what Jay meant by "Calculus will
never be the same..."

It is true. I love mathematics, and
when I returned to study calculus at
Brookdale, this beautiful young Francis
Soto is passing through in need
of assistance, and I was honored
to be able to assist her in
assembling the technology into calculus.

I pray, or rather: I will be walking
outdoors in the cold March wind to
anticipate warm weather... and to send out
powerful messages to Francis. I am
willing to learn Spanish. I am not
even afraid of losing Sherry. If
I end up alone, I will
have to endure it. I will
have my studies. If I can begin
a long courting process well
after Sherry and I have detached.

I mentioned not being able to see
her after May, and she let me
know not to give up so
easily.

I am unsure for writing about
this, but I feel so utterly
free. I want to Rediscover my
life!!! Grandma Kenton was
right... "I will wait. I want Sherry
to have some dignity. I will
not disrespect her."

make "comments" over the expected years to come.

Michael William Hunt
30 March 1995 (HEINRICH)

see hardcover B page 19 for exit.

1998 01 30 ♀ - re read &
- reflected upon contents
I see that Sherry and I were not suited for ~~each~~ ~~and~~ other and that Frances Soto was a catalyst for the break up.
I was arrested 7/14/97 for failure to stop for police. I was released from jail in December - I lost my job and residence in the Tark House.
I am collecting unemployment and waiting to meet with the Division of Vocational Rehabilitation.

I seem to have a reputation in my hometown of Freehold for being an insane anti-Semitic frustrated genius.
I may begin taking excerpts from my journals. I would call the work LETTERS FROM THE BREATH OF LIFE.

I would begin by stating that the unreflective life is not worth living.
I go into the chest and take out one notebook at a time - commenting on the contents of each. I explain that my notes from age 13 to age 19 were lost or set on fire.

I was homeless just before my arrest. So as to preserve what I have written, so that not all is lost, I embark on the condensed version of Letters From the ~~South~~ - Breath of Life.

1999 09 14 day 257

Logbook #58 was to be called
Coming Around Full Circle (summer 1999)
I was to prepare for Physics II by
reviewing Calculus II (Integration).
I did not begin to do so until
forced by my insufficient grasp of
the degree of Calculus
required to solve physics problems
in electromagnetism.
Hence, some notes from her (log #42)
and Brainwaves were jotted down on
first few pages of logbook #59 (autumn 1999)

WJH

RE-READ THIS JOURNAL March 2013

2013 09 14 I just got these old journals/records
back as I am in apartment in Brick, NJ,
5 miles from my mother in Lakewood. I had
to vacate my hometown of Freehold Boro, NJ
I was harassed by police and bombarded by
hangers-on. I was also previously harassed by
police in Ashbury Park, harassed by
neighbors I met West (Seattle & Federal Way),
harassed by neighbors in Ocean Grove.
Many problems in Matawan.

Not only do I sense I have been blacklisted
as far as any decent employment goes, but
I may even be becoming BLACKLISTED
when it comes to finding a residence
with Section 8. I am not too happy
down here on rt 70 in Brick. Although I
moved here to be close to my mother,
we are becoming estranged due to her
unyielding stance against my use of alcohol. WJH

2015.05.27 Middle of the night. I just scanned nearly 100 pages of those 500 pages.

I call it Operation: Digitize Diaries.

I am not going in order... I am doing some from each phase of my life, I kind of randomly but I actually for certain turning points. I can see that 1994 / 1995 was a crucial time of transformation.

Not only did I return to college part time, but I also purchased my first computer. I began smoking herb again after not smoking it for 7 years.

I met a woman and asked Sherry to move out.

I was left alone... a self-destructive lone wolf!
It was a heavy ~~took~~ heavy to go through.
When will I burn this?